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ABSTRACT

In the face of fiscal crisis, today's education reform measures must be both cost-efficient and classroom effective. Experience shows that successful measures incorporate lessons gained from the growth years of the 1970's. New teaching practices, for example, can be transferred from site to site; schools can use to their advantage past efforts of distant colleagues. At the same time, schools require the help of decentralized networks in implementing improvement proposals and maintaining normal operations during financially tight periods. Additionally, small incentive grants to schools and teachers can have an impact far exceeding their cost. Proper staff development is still another important reform category; substantial guidance is provided by past research on educational change. In sum, such activities are not meant to replace more comprehensive strategies, but they do represent an essential link in the educational reform chain. (KS)

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IMPLEMENTING SCHOOL IMPROVEMENT STRATEGIES

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EXECUTIVE SUMMARY

American education now faces a period of both unparalled opportunities and constraints. On the one hand, national elites and the general public alike have acknowledged the schools' problems and are mobilized to deal with them. Not only do recommendations and ideas for improving elementary and secondary education abound, but the political commitment to implement these proposals also exists. At the same time, the serious fiscal crisis now confronting all governmental levels means that policymakers and educators will be constrained in the type and scope of reforms they can initiate. Hard choices will have to be made from among alternative reform strategies and only those that meet the dual criteria of educational effectiveness and cost-efficiency are likely to be chosen.

The impact of whatever strategies states and local districts decide to adopt will ultimately depend on how successfully they can implement these changes in individual schools and classrooms. A decade of research on program implementation has demonstrated that good intentions and clear policy goals are not enough; the implementation process must also be an effective one. Organizational routines and management practices can be as important to the eventual success of a change effort as the actual content of that effort.

Since numerous other reports and articles have discussed both the need for and the proposed substance of major reform measures, this paper takes a slightly different approach. It focuses on several strategies that have proven successful in past school improvement efforts. These approaches are relatively low-cost and cannot substitute for major changes like increased teacher salaries or a comprehensive overhaul of academic standards.

Nevertheless, they are consistent with what is known about how to make schools more effective, and can either stand alone as modest, but still valuable, school improvement strategies or facilitate the implementation of larger reform efforts.

Research findings on the process by which broad policy goals are translated into school and classroom-level programs, together with results from studies of the factors most likely to improve learning outcomes, suggest that the most effective school improvement activities should include one or more of five basic characteristics:

- Individual activities should not operate in isolation or focus on objectives peripheral to overall district or school-level goals. Both the requirements for managing fiscal retrenchment and the characteristics of effective schools indicate that school improvement activities will only be successful to the extent that they are part of a larger, more comprehensive reform strategy.

- School improvement activities must be low-cost. Since the large, add-on projects of the past fifteen years are no longer feasible, schools need activities that cost no more than several thousand dollars, or in some cases, only a few hundred dollars. Consequently, these activities need to take advantage of existing institutional learning and economies of scale, but still be adaptable to the local setting.

- Local school improvement projects should impart expertise to teachers and principals. In addition to providing information about effective instructional techniques, these activities should also include a strong affective component to help boost morale and maintain expectations. Since high morale and positive expectations are critical in creating an effective school, teachers and principals need to be shown that they can still do their jobs well, despite the obstacles presented by declining or steady-state budgets.

- School improvement activities should encourage open communication and practitioner involvement in school-level decisions, even though many decisions may be centralized during retrenchment. These activities need to foster a sense of collegiality that allows teachers to participate in determining school-wide goals, but once they are agreed-upon, also encourages adherence to these goals and their related instructional and testing requirements.

- The leadership role of principals needs to be strengthened by

providing them with some discretionary funds to use both in tailoring district programs to the needs of their own schools and in encouraging teacher effort and initiative.

The school improvement activities that are most likely to succeed not only build on the effective schools research, but also take advantage of ideas, institutional arrangements, and implementation strategies developed during the growth years in public education. In the 1970s, a number of major new education programs were initiated, and some very important lessons about the process of implementing educational change efforts emerged from this experience. Three school improvement activities, in particular, draw upon these lessons:

- o dissemination and technical assistance networks
- o small incentive grants
- o staff development.

One of the most important lessons learned over the past decade is that new instructional practices can be transferred successfully from one site to another. If a district wants to revise its math and science curriculum, improve its staff development program, more effectively integrate handicapped children into regular classrooms, or meet a host of other objectives, it need not start from scratch. Given local commitment, districts and individual schools can now benefit from the past efforts of colleagues across the country.

However, school districts cannot implement new practices on their own without appropriate assistance in selecting projects, adopting them to the local setting, and then training staff to implement them. Many states are now finding that this type of assistance can best be provided through

decentralized networks staffed by generalists with management, communications, and staff development skills. This type of assistance is important not just in implementing new reform measures, but also in helping districts maintain their regular operations during a time of declining resources. Given the need for such a service and its direct link to school improvement efforts, technical assistance can be a very critical state function.

A number of states and local school districts offer small incentive grants to individual schools and teachers. These grants are awarded competitively; usually range from several hundred to several thousand dollars; and are most often used to purchase the materials or training necessary to install new projects in a school or classroom. Past research on the effects of these grants found that they have an impact far in excess of their cost. Clearly, they are not a substitute for more competitive teacher salaries, but they at least demonstrate that financially-strapped school districts still value good teachers. Incentive grants can also foster greater professional interaction among teachers by encouraging small groups of them or the entire faculty at a school to develop a project.

Not only is an ongoing program of staff development critical to the success of new projects, but it is also an integral part of day-to-day activities at particularly effective schools. Consequently, the lack of good staff development programs in many school districts seriously reduces teacher potential. The problem does not result from a lack of resources, however. Most school districts spend considerable amounts on such activities (sometimes as much as 5 percent of their total budget). How these funds are spent, not the amount, is the problem. Most district-sponsored staff development tends to consist of one-shot, large group sessions with no follow-through. Often

the topics covered have little relevance to the actual problems teachers encounter in their own classrooms or to on-the-job skills they need. Responsibility for staff development is often dispersed among a wide variety of school and district-level staff who have little awareness of what others are doing, even when they are making demands on the time and energies of the same teachers. As might be expected, the effects of such training are often quite transient and a questionable investment of scarce district resources.

Yet good staff development lies at the heart of effective schools. It not only helps teachers sharpen needed skills, but fosters the collegiality so essential to a good learning environment. And, despite its rather dismal record in most districts, staff development can be improved. In fact, past research on educational change provides substantial guidance about the characteristics of effective staff development programs. Such studies have consistently found that productive staff development activities have four characteristics:

- they consist of more than one or two sessions and pay particular attention to follow-through
- staff development sessions focus on teachers' current needs
- they use the individual school as the site for inservice activities
- the staff development process takes advantage of the expertise of teachers themselves and encourages them to share their own knowledge and experience.

This type of staff development is unlikely to cost more than existing programs. However, it does require spending resources differently--developing an overall staff development plan linked to broader school improvement strategies; encouraging greater coordination among the various district and school-level staff now providing inservice training; and conducting shorter,

but more frequent staff development sessions.

In sum, this paper focuses on school improvement activities that are low cost--involving either a small expenditure of new resources as in the case of teacher incentive grants or a more cost-effective use of existing funds for activities like technical assistance networks and staff development. Although these activities are not a substitute for more comprehensive measures, major educational reform cannot be accomplished without them. The past fifteen years have taught us that the manner in which policy goals are translated into programs and in turn, the form in which they reach individual schools and classrooms are as important to the eventual success of an endeavor as the original idea itself. School improvement activities are the final links in the chain of educational reform. If they are overlooked in the movement to improve the nation's schools, an effort of great potential may very well fail.

Recently, the condition of American education has received considerable attention from policymakers, the mass media, and the general public. Citing problems that stem from a diluted curriculum, lower teacher quality, and declining achievement scores, several national commissions have recommended major changes ranging from stiffer academic requirements, a lengthened school day and year, to a basic restructuring of the teaching profession. /1 While most agree on the need for fundamental reform in elementary and secondary education, the obstacles to such a change are many. One of the most serious is the severe fiscal retrenchment currently facing public education. Even if states and local districts want to initiate new policies, many cannot afford to do so, and even the most affluent, cannot do everything that has been recommended as necessary. Therefore, hard choices will have to be made from among alternative reform strategies and shorter-term, incremental approaches may, of necessity, take precedence over more comprehensive, longer-range measures.

The impact of whatever strategies states and local districts decide to adopt will ultimately depend on how successfully they can implement these changes in individual schools and classrooms. A decade of research on program implementation has demonstrated that good intentions and clear policy goals are not enough; the implementation process must also be an effective one. Organizational routines and management practices can be as important to the eventual success of a change effort as the actual content of that effort.

Since numerous other reports and articles have discussed both the need for and the proposed substance of major reform measures, this paper takes a slightly different approach. /2 It focuses on several strategies that have

proven successful in past school improvement efforts. These approaches are relatively low-cost and cannot substitute for major changes like increased teacher salaries or a comprehensive overhaul of academic standards and curriculum. Nevertheless, they are consistent with what is known about how to make schools more effective, and can either stand alone as modest, but still valuable, school improvement strategies or facilitate the implementation of larger reform efforts.

The set of strategies discussed in this paper are particularly appealing because they provide a useful tool in the management of fiscal retrenchment, and at the same time, are consistent with findings from both the research on school effectiveness and program implementation. In the first section, the link between the management of fiscal retrenchment and the need for more effective schools is explored. The second section describes several school improvement strategies whose content is informed by the school effectiveness research and whose implementation strategies are based on past experience with educational change programs. A final section discusses the potential role of these strategies in the larger context of education policy and school reform.

FISCAL RETRENCHMENT AND SCHOOL IMPROVEMENT

The Need for Innovation

In order to mangage fiscal retrenchment well, policymakers need to make major adjustments in their traditional operating styles. For example, the incremental decisions that have traditionally characterized public policy-making have to be replaced by a more comprehensive approach. School districts can no longer afford to make marginal adjustments in existing policy by adding new services and programs. Rather, local officials need to define what the district's educational goals and those of individual schools will be, and how

these objectives will be accomplished. In other words, it is essential that as resources decline, local officials know where they are leading their districts and how they will get there. Rather than reacting to each crisis as it arises with decisions that may or may not be linked to previous ones, school boards, superintendents, and individual principals need to formulate a comprehensive plan that specifies both ultimate and intermediate objectives.

Another requirement of successful management during retrenchment is one that we do not ordinarily associate with fiscal hard times: the need to innovate. Innovation is often viewed as something districts can only afford when their budgets are growing and new funds are available. However, nothing could be further from the truth. Innovation is an essential ingredient in managing fiscal retrenchment and is as necessary during periods of contraction as it was during the growth years. In fact, there is evidence to suggest that past adversity has produced major innovations in public education (Tyler 1982:656).

Just as school boards and superintendents need to be clear about overall district goals, they also need to encourage central office and school site staff to find better and more efficient ways of meeting those goals. If organizational capacity is to be maintained, districts cannot continue simply to make across-the-board cuts. Rather, they need to find new ways of delivering basic instructional services. Innovation also helps maintain the morale of the most productive staff because it gives them a sense that new ideas will be welcomed and that there is something more challenging to do than just "weather the storm."

As with comprehensive decision-making, however, innovation during fiscal retrenchment is not easy. Sufficient budgetary cuts must be made both to

accomplish necessary savings and to allow innovation to proceed (Biller 1980:607). Perhaps more importantly, the traditional incentive structure of most school districts needs to be altered. Superintendents and principals, like most administrators, typically assume that the larger their budgets, the greater their status. Fiscal retrenchment requires that incentives shift so administrators can win even when their budgets decrease, providing they adapt to changed circumstances efficiently and creatively. In essence, successful management of fiscal retrenchment largely depends on whether or not school officials can create an incentive structure that encourages innovation.

Despite some weaknesses in study design and methods (Cohen, in press; Purkey and Smith 1982), the school effectiveness research provides a set of solid guideposts that give substance to such an incentive structure. Past research on public sector organizations argues that fiscal retrenchment demands innovation to increase cost-effectiveness and general organizational capacity. However, this body of literature does not identify those innovations with the greatest likelihood of improving educational as well as organizational quality. For that, we must turn to the effective schools research. The next section links these two research strands and suggests factors that need to be included in school improvement activities during financial hard times.

Elements of A School Improvement Strategy

In examining the link between fiscal retrenchment and activities aimed at improving local educational quality, we need to remember that no set of activities will be effective unless they are part of a larger, more comprehensive strategy. Specific projects must address overall district and school-level goals. Not only does such an approach meet the requirements for

managing fiscal retrenchment, but it is consistent with the characteristics of effective schools.

Since several recent review articles have carefully synthesized the results of the school effectiveness research, major findings are only summarized here in order to provide a basis for identifying appropriate school improvement activities (Cohen, in press; Murnane, 1981; Purkey and Smith 1982). Basically, this research has focused on those characteristics that distinguish effective schools and classrooms from less effective ones, and has found that the way schools use the resources available to them can be as important as the absolute level of these resources. In other words, there are certain elements of the schooling process that can make a school more effective without necessarily changing the total amount of available resources. These factors include school-level variables such as the principal's role as an instructional leader; agreement among the principal, teachers, and parents about the school's instructional goals; an orderly school environment that is conducive to learning; and consistency among the school's objectives, its curriculum, and the measures used to assess student performance. A second set of factors that have been found to influence learning outcomes positively relate to individual teachers and the way they manage their classrooms. These include: high teacher expectations that students can perform regardless of their backgrounds; classroom management techniques that engage students' attention and minimize time lost to disruptions; and the use of active, direct instructional approaches. Other, related characteristics include: a strong sense of teacher efficacy; ongoing inservice training for teachers; a balance between strong principal leadership and teacher autonomy; and high levels of parent-teacher and teacher-principal

contact (Armor, et al. 1976).

Linking these findings with what we already know about fiscal retrenchment suggests that the most effective innovative activities will include one or more of five basic characteristics. First, they should not operate in isolation or focus on objectives peripheral to overall district or school-level goals. For example, if a school decides that it wants to concentrate on basic skills instruction, enrichment projects in art education or environmental studies are inappropriate unless they are designed to enhance the basic skills curriculum. In other words, during times of fiscal retrenchment, local districts cannot afford innovation simply for the sake of innovation. Not only does it not make good fiscal sense, it lessens the activity's potential effectiveness and its chances for continuation (Fullan 1982:57).

Second, school improvement activities must be low-cost. The large, add-on projects of the past fifteen years are no longer feasible. Schools need activities that cost no more than several thousand dollars. In some cases, no more than several hundred dollars may be available. Consequently, these activities need to take advantage of existing institutional learning and economies of scale, but should still be adaptable to the local setting. Here, the trade-off between the sense of ownership that comes with local development and the additional costs inherent in such an approach becomes apparent. As we shall see in the next section, however, a number of mechanisms exist that allow local districts to take successful projects developed elsewhere and adapt them to their own needs and context.

An obvious, third requirement of local school improvement projects is that they impart expertise to teachers and principals. The effective schools

research provides considerable guidance for teachers about how to organize their classrooms to maximize instructional time and create an atmosphere conducive to learning. Similarly, this same body of research can help principals in becoming more effective instructional leaders--in setting school-wide instructional goals, working productively with teachers, and in monitoring the school's progress. Since so little is known about the phenonmenon, district and school-level personnel also need more information about fiscal retrenchment and how to manage it effectively. At the same time, teachers and principals need to participate in activities that provide them with more than just expertise and information. School improvement projects should also have a strong affective component to help boost morale and maintain expectations. We know that the frustrations inherent in coping with fiscal retrenchment, whether by a teacher with more students and fewer aides or by a principal lacking sufficient resources to hire additional staff can seriously weaken morale. Yet high morale and positve expectations are critical in creating an effective school. Therefore, teachers and principals need to be shown that they can still do their jobs well, despite the obstacles presented by declining or steady-state budgets.

Fourth, school improvement activities should encourage open communication and practitioner involvement in school-level decisions even though many decisions may be centralized during retrenchment. Clearly, fiscal retrenchment demands centralized leadership, particularly in budgetary policy. Research on educational change has also identified the importance of active superintendent support and leadership for the successful implementation of new programs (Fullan 1982:65). However, a balance needs to be struck between the authority of central office administrators and the autonomy of school-site

staff. Within the limits imposed by district-wide objectives and resource constraints, teachers and principals need to be free to decide which instructional approaches make the most sense in their own schools.

This tension between the need for centralized direction and the autonomy of individual practitioners is evident not just between districts and schools, but also within each school. On the one hand, teachers have always enjoyed considerable autonomy within their own classrooms, and this potential for making independent judgements has been important in maintaining their morale and their image of themselves as professionals. At the same time, past research is quite clear in showing that the most effective schools, particularly at the elementary level, are tightly coupled. Schools goals, instructional content, and pupil performance measures are all consistent with each other and across individual classrooms (Cohen in press). To be successful, school improvement activities must address this seeming tension. They need to foster a sense of collegiality that allows teachers to participate in determining school-wide goals, but once they are agreed-upon, also encourages adherence to these goals and their related instructional and testing requirements.

Finally, the leadership role of principals can be given greater meaning if they are provided with at least some discretionary resources. Such funds can be used to create incentives that encourage teachers to try new approaches; reward those that show particular initiative; and generally motivate school-site staff. These resources also provide principals with some flexibility in tailoring district programs to the needs of individual schools.

In arguing, then, that school districts facing fiscal retrenchment should continue to innovate, we are talking about very specific types of changes.

These consist of activities that build on the effective schools research, and above all, are low-cost. They also take advantage of ideas, institutional arrangements, and implementation strategies developed during the growth years in public education. The next section examines three such activities in some detail.

COST-EFFECTIVE SCHOOL IMPROVEMENT ACTIVITIES

During the 1970s, a number of major new education programs were initiated. Many of the lessons that experience with these programs have taught educators and policymakers are substantive ones, relating to curriculum content and the nature of the services delivered to students. However, some other very important lessons about the process of implementing educational change efforts also emerged from this experience. In fact, much of what we know about policy implementation and the transformation of programs as they move through levels of the governmental system comes from state and local experience with federal education programs. For example, past experience has demonstrated the limitations on program implementation that consists of only "top-down" mandates without sufficient communication and joint planning between top-level administrators and those who actually deliver services to children. This is true whether the level initiating a particular program is the federal government, an individual state, or a local district trying to change its own schools. We now know that whatever policy instrument is selected to solve a particular problem, mechanisms must be built into the implementation strategy which encourage individual practitioners to feel ownership of the program being implemented and which enhance local capacity to accomplish program goals. The school improvement activities discussed in this section are just such mechanisms, and all are at least partial outgrowths of

several federal programs designed to improve elementary and secondary education.

Although the majority of federal education funds are spent on compensatory programs for special needs students, the federal government has also played a major role in supporting educational innovation and school improvement. Unlike the formula grants typical of larger programs like ESEA Title I or the Education for All Handicapped Children Act (94-142), federal programs to promote innovation usually involve relatively small sums of money awarded competitively to local districts. These smaller programs are also much less directive than those for special needs students; federal regulation is minimal, with the emphasis on meeting locally-defined needs. Included in this group are the ESEA Title IV-C program, the National Diffusion Network (NDN), and the National Institute of Education's Research and Development Utilization (RDU) program.

At first glance, these activities may appear to be just so many dinosaurs left over from the growth years of public education. Not only is there less federal money available for such endeavors, but the administrative framework within which these programs operate has also changed significantly. The Title IV-C program has been consolidated, along with 29 other categorical programs, into the Chapter 2 block grant, and the effects of this change are still not yet fully known. RDU funding ended in 1979 and while NDN continues, its future is uncertain. Yet even if all these programs and others like them were terminated, they would still leave an important and continuing legacy. Not only were they responsible for developing and disseminating specific projects in areas like reading instruction, teacher inservice, and local problem-solving, but they also provide invaluable lessons about the educational change

process. In essence, such programs are a source of ideas and instructional approaches that work and are still appropriate during fiscal retrenchment. This section examines several activities that were hallmarks of these programs and suggests how they might be used now in the search for more effective schools.

Dissemination and Technical Assistance Networks

When the Title IV-C program (then Title III) first began, it emphasized the development of new curriculum and instructional approaches. However, as the number of innovative projects grew, the program's focus shifted and dissemination started to play a larger role. In the view of many state IV-C officials, sufficient exemplary projects had been developed and were operating smoothly enough to justify adoption as a new priority. By the late 1970s, most states were spending at least part of their IV-C grants on various dissemination activities (McDonnell and McLaughlin 1980:18-19). These included: assistance to local districts wishing to adopt a project developed elsewhere, funding for project developers to disseminate their projects in other districts, and support for various types of intermediate units to work with local districts in developing or adopting innovative projects.

The National Diffusion Network is complementary to Title IV-C and provides another vehicle for national dissemination of innovative programs. After several years of operation, new programs (many developed with Title IV-C funds) are judged on their effectiveness by a national panel. If they are "validated" as exemplary, these programs then become eligible for dissemination funding. Currently validated programs include ones in basic skills instruction, early childhood and parental readiness training, bilingual and special education, alternative schools, and inservice training.

Descriptions of these programs are published in a nationally-available catalogue, and NDN-funded state facilitators make this information available to local districts and help interested ones select appropriate projects. In addition, the original project developers are funded to assist adopting districts. However, districts adopting NDN projects receive no direct funding and are usually given only some in-kind assistance in the form of project materials and training.

The RDU program was a three-year experimental program that operated on the same basic principle as Title IV-C and NDN, although with some variation. In addition to disseminating practitioner-develped projects, RDU made available Research and Development products from universities and regional labs and centers; it was also designed to improve local problem-solving skills. The program operated through seven different regional projects with each typically including a state education agency working in conjunction with other R&D, technical assistance, and training agencies.

Evaluations of these and similar programs indicate a record of considerable success: state and local practitioners found them useful and in many instances, the programs were able to change teacher behavior (Crandall, et al., 1982; Fullan 1982; Louis, et al., 1981; McDonnell and McLaughlin 1980). Beyond this general conclusion, however, these studies provide evidence about the importance of such dissemination strategies and the conditions under which they are most likely to be effective.

A growing body of research points to the importance of state and local factors in explaining variation in implementation outcomes (e.g., Berman and McLaughlin 1975, 1977; McDonnell and McLaughlin 1982). State political culture, the role of general government in education policy, the amount of

autonomy provided principals by the central office, the degree of community support for public schools, and other similar factors are significant in explaining why an identical program will look quite different across school districts, even within the same state. Nevertheless, the history of federal dissemination efforts shows that, despite the strength of local factors, ideas and techniques from one district can be transferred to others quite effectively. Local districts need not "reinvent the wheel" in their efforts to solve problems or better meet their instructional goals. By taking advantage of past development efforts, they can maximize scarce resources.

Still, no innovation is transferred automatically from site to site. Just as federally-funded dissemination projects provide evidence that such transfers can be made, they also indicate just how difficult that process will be if certain factors are absent. First, an innovative project is unlikely to be transferred successfully if it does not meet a specific district or school-level need. All major studies of federal dissemination efforts have found a strong relationship between the relevance of a specific project to district needs and the extent of its implementation (Fullan 1982:57). Because districts voluntarily applied to adopt these projects and were provided no direct financial assistance, the kind of opportunistic behavior that often characterizes applications for external funding was not present in most cases. For example, in the RDU program, federal funds only accounted for about 20 percent of the local costs of program participation (Louis et al., 1981:22). Consequently, districts had to be certain that project costs could be justified in terms of local need.

A second set of factors relates to project content. As might be expected, the ability of districts to implement a new practice depends on the

project's overall quality, its complexity, the practicality and relevance of related materials; and the extent of change the new practice requires of teachers and administrators (Fullan 1982:58-62). In addition to project-specific factors, district and school-level characteristics clearly affect the implementation of educational innovations. The critical and postive role that superintendent support plays in the implementation of district-wide programs has already been mentioned. Similarly, principal leadership and active participation in project activities increase the likelihood that a project will be implemented at the school-level (Berman and McLaughlin 1977). Teacher characteristics, such as their sense of self-efficacy, and the activities in which they engage (e.g., formal staff training and informal interaction with colleagues) are core variables in explaining the extent to which new practices are implemented. (See Fullan 1982 for a comprehensive analy is of this research.) Unless classroom teachers are commited to a proposed change and receive sufficient training and assistance, innovative projects stand little change of being incorporated into classroom practice.

For districts and schools adopting projects developed elsewhere, another very important factor is the role of external assistance. Even if a project is relevant and well-conceived, with district and school-level actors positively disposed towards its adoption, implmentation is unlikely to occur unless face-to-face assistance is provided by qualified dissemination staff (Crandall et al., 1982). In fact, the role of external assistance remains significant in explaining the impact of a disseminated practice even after project and local organizational characteristics are taken into consideration (Louis et al., 1981:38). External assistance encompasses a broad range of activities, including: preimplementation help in identifying local needs and

selecting appropriate projects for adoption; focused training from specialists familar with project content; and more generalized assistance during the implementation process in working out procedural details and in adapting projects to the local setting. Despite its centrality to the implementation process, such assistance is not expensive. For example, Louis and her colleagues (1981:22) estimate that even when local expenditures are included, the total cost of each RDU project was only about $5000-$40,000 a site.

Clearly, the decreased federal role in supporting dissemination efforts makes the provision of such external assistance difficult. However, much of the implementation aid funded by these programs was actually provided by state education agency (SEA) and intermediate unit staff. So even if the federal government further decreases its support for these activities, the necessary expertise will still exist in many SEAs and intermediate units.

The question then becomes how to support such external assistance in the face of federal funding cuts. One answer may lie in the decision of many state governments to initiate educational quality improvement programs (see McLaughlin 1982). Currently, these programs range from the mere promulgation of state guidelines to comprehensive strategies that include student competency tests, revised teacher certification standards, and assistance in local planning and curriculum development. Not only have a majority of states initiated at least some of these measures, but there is every indication that the scope of their efforts will expand considerably over the next few years. In response to public concern about the quality of schooling and the link between education and economic development, many states are now considering major changes in academic requirements and curriculum content. We would argue that as states continue to look for ways to improve or expand their quality

improvement programs, the role of external assistance should be considered as a central component. Thirty-four states now have some system of intermediate units (Yin and Gwaltney 1981). Although many are primarily intended to create economies of scale in the delivery of special student services (e.g., for severly handicapped children), generalized technical assistance to local districts is also often included among their responsibilities. Given the need for such service and its direct link with school improvement efforts, assisting local districts in adopting new practices is not only an appropriate, but a necessary state role.

For some states, however, such a technical assistance role would mean a profound change in the way the SEA interacts with local districts. Particularly in states where the political culture does not sanction a strong state presence in local jurisdictions, the SEA has often operated as a funding conduit that promulgates regulations and acts as a fiscal agent for state and federal funds allocated to local districts. However, the state is quite remote from these districts and is not viewed as a source of assistance in either program management or curriculum matters. Even in some states where the SEA plays a stronger role in local operations, its assistance may be limited to the work of several curriculum specialists who are experts in specific subjects like math, reading, and art. Such staff are traditionally responsible for developping various curriculum guides that are then sent to all districts, and for providing assistance to local district counterparts on specific curriculum-related issues.

This approach contrasts with a technical assistance model that more and more states are now adopting. Technical assistance is decentralized through either SEA branch offices or intermediate units that function as locally-

governed school district consortia. Technical assistance staff are each responsible for helping a group of school districts and operate in them as generalists with management, communications, and staff development skills. They provide assistance on an as-needed basis and also coordinate staff development workshops and information services that alert local districts to curriculum projects, instructional approaches, and management practices developed elsewhere that might meet their own needs. In essence, these technical assistance staff act as resource brokers by either providing needed services to local districts directly or by identifying experts in other districts or institutions (e.g., the central SEA or universities) who can best help address a specific problem.

Clearly, there will always be a need for the traditional curriculum specialist, particularly as districts begin to upgrade their math, science, and foreign language programs. However, many states are finding that sole reliance on such a technical assistance model is no longer economically feasible. It simply costs too much to have a complete range of curriculum specialists working as full-time SEA staff, particularly now that the school effectiveness research has demonstrated the need for coordination across individual subject-matter activities. Consequently, curriculum specialists must be supplemented by staff who are expert in disseminating successful program models, implementing them in new settings, and coordinating diverse activities all designed to meet the same goal. States are, therefore, finding it more cost-effective to have generalists provide technical assistance on a regional basis and call upon curriculum experts only when they are needed to address specific problems. In all likelihood, states that can establish or strengthen their existing technical assistance networks consistent with this

model will be in the best position to provide local districts with cost-effective help as they begin to implement various school improvement programs.

In sum, local district experience with federal dissemination programs provides a model for innovation during times of fiscal retrenchment. As a result of the research and development that occurred over the past fifteen years, a wide variety of school improvement strategies are now available. Although local characteristics will always be significant in the educational change process, the evidence is clear: new practices can be transferred successfully from one site to another. If a district wants to revise its math and science curriculum, improve its staff development program, more effectively integrate handicapped children into regular classrooms, or meet a host of other objectives, it need not start from scratch. Given local commitment and appropriate external assistance, districts and individual schools can now benefit from the past efforts of colleagues across the country.

Small Incentive Grants

Another change that occurred in the Title IV-C program as it matured was the introduction of mini-grants. These small grants, in most cases for no more than $10,000 and usually for considerably less, were awarded competitively to individual schools or teachers for only one year. They supported such diverse activities as staff development, community relations seminars, ecology field trips, and writing skill workshops. Funds were primarily used to purchase the materials or training necessary to develop and install these new projects in a school or classroom. Program officials believed that such grants, in the hands of highly-motivated school personnel could produce a large return for a small investment.

Small incentive grants are not limited to the Title IV-C program. A number of states and individual school districts award similar kinds of grants with most ranging in amounts from several hundred to several thousand dollars. In a few districts, these grants are the result of the collective bargaining contract with funds awarded competitively to individual teachers. Such grants can also be administered by individual principals as a way of encouraging initiative and new ideas at the school-level.

Because they involve so little money, one might assume that these grants will have little or no impact. However, there is strong evidence to suggest that such grants can induce substantial improvement in local practice. An evaluation of the Title IV-C mini grants found that they had an impact far in excess of their cost. They were able to generate high levels of local commitment and enthusiasm because they appealed to teachers' sense of professionalism. They also signaled to teachers that their efforts were being recognized by a broader network and that bottom-up initiative was not only acceptable, but encouraged (McDonnell and McLaughlin 1980).

Even for small school districts, spending $5000-$10,000 a year for such incentive grants is likely to be a very good investment. First, it is a way of sending a clear signal that innovation is recognized and encouraged. Districts and individual schools can even establish funding priorities for such grants consistent with school improvement goals. Second, such grants are another way of helping to maintain the high teacher morale so critical to an effective school. Clearly, they are not a substitute for smaller class size or more competitive salaries, but they at least demonstrate that financially-strapped school districts still value good teachers. Finally, incentive grants can also foster greater professional interaction among teachers by

encouraging small groups of them or the entire faculty at a school to develop a project. However, it is important to remember that just as the use of dissemination networks should only be undertaken as part of a larger strategy, mini grants are of little or no benefit unless they are linked to other school improvement activities.

Staff Development

Running through this entire discussion of innovation is one constant theme: the need for effective staff development. Not only is it a significant determinant of success in implementing new practices, but an ongoing program of staff development is also an integral part of particularly effective schools. Consequently, the lack of good staff development programs in many school districts seriously reduces teacher potential.

The problem does not result from a lack of resources, however. In fact, one indepth study of teacher inservice in three urban school districts found that these districts were spending between 3.3 and 5.7 percent of their entire budgets on various inservice activities. Not only did this amount to more than $4 million a year in each district, but it was as much as fifty times more than what district officials estimated the true cost to be. This miscalculation was largely due to a lack of coordination among those responsible for providing different types of staff development services and to the hidden personnel costs of such activities (Moore and Hyde 1981). As this example illustrates, the problem is not the amount of money spent, but how it is spent.

Most district-sponsored staff development tends to consist of one-shot, large group sessions with no follow-through. Often the topics covered have little relevance to the actual problems teachers encounter in their own

classrooms or to on-the-job skills they need. Responsibility for staff development is often dispersed among a wide variety of school and district-level staff (e.g., special program coordinators, curriculum specialists, etc.) with little awareness of what others are doing, even when they are making demands on the time and energies of the same teachers. Consequently, classroom teachers may be required to participate in inservice sessions that range from familarizing them with federal and state program regulations to introducing them to the classroom uses of microcomputers. Yet little effort is made by these disparate staff development personnel to see that the activities they sponsor are linked with each other. This lack of coordination has become particularly troublesome as a result of various categorical programs that include narrow staff development components which are usually not coordinated with the general curriculum. In these cases, staff development activities are simply an outgrowth of program requirements and operate quite peripherally to larger district and school-level objectives.

Not only are the direct costs of such activities very high in terms of teacher and other staff time, but they are compounded when staff development programs overlap or conflict with each other, or when the information they provide has little practical use for teachers. As Howey and Vaughan (1983:97) conclude:

> What emerges then is a not so pleasant picture of a potentially well-supported (in terms of resources) enterprise that is fragmented, not frequently engaged in on a continuing basis by practitioners, not regarded highly as it is practiced, and rarely assessed in terms of teacher behavior and student learning outcomes.

Colleges and universities have also traditionally provided teacher inservice as a way for teachers to upgrade their credentials and move up the district salary scale. The most common criticism of such inservice in that it

occurs away from the school-site and is usually quite theoretical. Perhaps more importantly, even when teachers see an application for such inservice, there is usually no one available to help them as they actually implement the new practice in their own classrooms. Once again, the absence of follow-through limits the usefulness of even the most informative staff development activities.

As might be expected, the effects of such training are likely to be quite transient and a questionable investment of scarce district resources. This lack of long-term effectiveness coupled with the high cost of staff development means that it has become very vulnerable as districts begin to reduce their budgets. Staff development is viewed as expendable largely because of its poor track record. Unfortunately, this judgment has obscured the importance of good staff development to school improvement efforts and successful program implementation.

Despite its rather dismal record, however, staff development can be improved. The research on educational change provides substantial guidance about the characteristics of effective staff development programs (Armor et al., 1976; Williams 1978; Little 1981; Fullan 1982). Studies of the educational change process have consistently found that productive staff development activities have four characteristics. First, they consist of more than one or two sessions and pay particular attention to follow-through. When teachers are presented with a new instructional approach, they are given the opportunity to try it in their own classrooms and then return for discussion and further assistance on the specific details of applying that new practice. Ideally, staff development personnel are also available, upon request, to visit individual classrooms and provide more specific assistance. In other

words, the staff development process is not limited to the explication of educational theories; it also includes assistance in the application and actual practice of those theories.

Second, staff development sessions should focus on teachers' current needs. Teachers should be involved in identifying those needs and in selecting inservice topics. As a general rule, staff development should also emphasize the strengthening of problem-solving skills. With such a focus, teachers can sharpen skills that are useful, regardless of the particular problem or situation they face.

A third characteristic is the use of the individual school as the site for inservice activities. Such an approach meets several requirements of good staff development. It allows inservice sessions to be tailored to the unique needs of individual schools and ensures that principals and teachers are involved in topic selection and in the solutions or new approaches that are selected. In this way, the likelihood of successful implementation is increased. By holding at least some staff development activities at the school-site, teachers are encouraged to interact more with their fellow faculty members both in formal sessions and in later informal discussion.

Regardless of where inservice training is conducted, this last item represents an important characteristic of good staff development. Teachers themselves are important resources in the staff development process and should be encouraged to take advantage of their shared experience and expertise. This can be done in small group workshops during formal training sessions, in informal follow-up discussions, or in one-to-one interaction. Clearly, good staff development depends on the use of external assistance, both from those with content expertise and from those with more general skills in classroom

management and the educational change process. At the same time, however, it needs active teacher involvement in its design and implementation. Only in this way will staff development be relevant to the needs of individual schools and in turn, have any lasting effect on its participants.

The type of staff development program described here is unlikely to cost more than existing ones. However, it does require spending resources dfferently--developing an overall staff development plan linked to broader school improvement strategies; encouraging greater coordination among the various district and school-level staff now providing inservice training; and conducting shorter, but more frequent staff development sessions. Still, like all district programs, even well-conceived staff development is vulnerable in a time of stable or decreasing budgets. School districts, therefore, need to identify staff development strategies that are both cost-efficient and effective.

Many states and school districts have already found a variety of ways to make staff development programs more productive without increasing their cost. For example, some states and local districts have established programs that operate on a peer model. A small cadre of teachers is trained by outside experts, often in intensive summer sessions. These teachers then conduct inservice sessions for their colleagues and assist them in other ways. Such an approach guarantees that districts will have their own pool of staff development expertise. Since those providing such services remain classroom teachers, this model also ensures that staff development topics are relevant to current teacher needs. Some districts use regional consortia for staff development. These consortia may be established solely for the purpose of staff development or may be part of existing intermediate units. By using

such consortia, start-up costs are minimized and economies of scale created. The search for cost-effective staff develoment strategies is not limited to state and district officials. Some principals have also found rather ingenuous ways to provide ongoing staff development for their faculties. For example, some principals have hired part-time personnel (e.g., from a local college) who serve as athletic coaches and thus, release all teachers working at the same grade-level for an inservice period several times a week. With assistance from the schools' own math and reading specialists, district-level staff, and outside consultants, these sessions focus on problems and topics the teachers themselves raise. This type of staff inservice has the advantage of providing regular and practical staff develpment as well as physical education instruction for students, all at a relatively low cost. These are just a few of the many ways staff development programs can be made more productive.

Up to this point, staff development has been described primarily as it relates to classroom teachers. But good staff development is an important resource for principals as well. Principals are expected to be both expert managers and instructional leaders. Yet they are provided with few resources to accomplish this demanding task. A few states (e.g., Arkansas and North Carolina) have realized that staff development programs should be extended to principals and have established "Principal Academies." These are most often staffed by SEA personnel and principals who have been identified by their colleagues as particularly skillful. These men and women take leave from their own districts for one year and conduct workshops for principals on such topics as curriculum planning, more effective school management, and the substantive aspects of instructional leadership. Like the dissemination of

innovative practices, staff development for principals is another component of state quality improvement programs with potentially high pay-off.

Good staff development lies at the heart of effective schools. It not only helps teachers sharpen needed skills, but fosters the collegiality so essential to a good learning environment. Also, just as fiscal retrenchment demands innovation, innovation demands effective, ongoing staff development.

SCHOOL IMPROVEMENT AND EDUCATIONAL REFORM

This paper has focused on school improvement activities that are low cost--involving either a small expenditure of new resources as in the case of teacher incentive grants or a more cost-effective use of existing funds for activities like technical assistance networks and staff development. In addition to their low cost, these activities are particularly appealing because they are consistent with what is known about how to make schools more effective, and they have a proven track record. Consequently, some financially-strapped school districts may view these activities as a substitute for more costly reforms like stiffer academic requirements or higher teacher salaries.

Unfortunately, the school improvement activities discussed here are not a substitute for systemic reform measures. If implemented alone, these activities can improve the quality of teaching and the way in which educational services are delivered to students. However, they are not designed to alter what is taught or who teaches it. For this type of comprehensive change, other measures are necessary. But just as school improvement activities are not a substitute for more systemic approaches, major educational reform cannot be accomplished unless it includes both substantive changes, like stricter academic requirements, and implementation

tools, like appropriate staff development and external technical assistance. This final section examines the role of these two components of educational change and the symbiotic relationship each shares with the other.

Several national commissions and numerous commentators (e.g., see Botstein 1983) are now recommending that Congress, state legislatures, and individual school districts adopt some of the most comprehensive reforms in American education since the Sputnik scare two-and-a-half decades ago. Some of these, like raising teacher salaries and lengthening the school day (National Commission on Excellence in Education 1983; National Task Force on Education for Economic Growth, forthcoming) would require billions of dollars in additional funds for the public schools (Education Times 5/16/83:4). The cost of others, like upgrading textbooks and other instructional materials (Kirst 1982; National Commission...1983) and imposing stricter course requirements (National Commission..1983) would either fall outside the school system (e.g., on textbook publishers) or would involve a reallocation of resources (e.g., away from "frill" courses to more academic ones). There is no question, however, that such measures would require a major increase in the total amount spent for public education and an equally signficant shift in the way funds are allocated.

Although cost is a major factor distinguishing these measures from the activities proposed in this paper, it is not the most important one. Two others are equally significant. The reform measures now being placed on the nation's policy agenda involve the substance of education (i.e., what is taught) and they imply systemwide changes that are based on centrally-established standards (e.g., state-level high school graduation requirements). On the other hand, the school improvement activities discussed in this paper

deal with the process rather than the substance of teaching and learning, and they focus on individual schools and classrooms rather than on the educational system as a whole.

Clearly, the current condition of American education and the public's concern about its effect on the country's economic and social well-being demand that national and state leaders initiate major, top-down reform. Most local districts and individual schools lack the resources to implement such changes on their own, and the national interest requires that educational reform not be limited only to the most innovative or affluent districts. Hence, the nation now needs substantive reform measures that are both comprehensive in scope and national in impact.

Despite a broad focus, however, this type of systemic reform is only a necessary, but not a sufficient condition for improving the nation's schools. Both research on effective schools and on policy implementation tell us that no program, no matter how comprehensive or well-conceived, can succeed unless it engages individual principals and teachers in a manner consistent with their own interests and the way in which schools and classrooms actually operate. The success or failure of any reform effort ultimately depends on what happens once it reaches the school building. For example, it will make little difference for a state to require more rigorous content in its textbooks if teachers continue to teach as they did when they used less-demanding texts. Similarly, requirements for a longer school day or more homework will mean little if principals and teachers are perfunctory in implementing them. School-level personnel must be provided with the expertise to implement these policies and they must be convinced that such changes meet the needs of their own school. Without appropriate resources and

implementation strategies, even the best of intentions and the strongest consensus on objectives will not be translated into practice.

The school improvement activities discussed in this paper, particularly technical assistance networks and good staff development, constitute the vehicle for bringing major educational reforms inside schools and classrooms. They are effective implementation tools that can stimulte appropriate changes in current school operations, and transform the grand designs for educational change now being proposed into concrete activities. Low-cost school improvement activities cannot be substituted for major reform measures, but neither can they be ignored in the quest for better schools.

The possibility for a comprehensive reform of the nation's schools is greater today than it has been in the last twenty-five years. National elites and the general public alike have acknowledged the problems facing education and are now mobilized to deal with them. Not only do recommendations and ideas for improving the schools abound, but the political commitment to implement these proposals also exists. Without sound implementation strategies, however, this movement for educational reform will remain no more than an unfulfilled expectation. The past fifteen years have taught us that the manner in which policy goals are translated into programs and in turn, the form in which they reach their intended beneficiaries are as important to the eventual success of an endeavor as the original idea itself. School improvement activities like staff development and technical assistance networks are the final links in the chain of educational reform. If these activities are overlooked in the movement to improve the nation's schools, an effort of great potential may very well fail.

FOOTNOTES

/1 Over the past few months, several national commissions and task forces have reported on the condition of American education and recommended major changes in school operations. These include: the National Commission on Excellence in Education, created by the U.S. Secretary of Education; the National Task Force on Education for Economic Growth, convened under the auspices of the Education Commission of the States; and finally, the Task Force on Federal Elementary and Secondary Education Policy sponsored by the Twentieth Century Fund.

/2 This paper is an expanded and revised version of a chapter that will appear in Allan Odden and L. Dean Webb, eds., SCHOOL FINANCE AND SCHOOL IMPROVEMENT: LINKAGES IN THE 1980s, Ballinger Press, Cambridge, Massachusetts.

REFERENCES

Armor, David, et al. (1976). ANALYSIS OF THE SCHOOL PREFERRED READING PROGRAM IN SELECTED LOS ANGELES MINORITY SCHOOLS. Santa Monica, California: The Rand Corporation.

Berman, Paul and Milbrey McLaughlin. (1975). FEDERAL PROGRAMS SUPPORTING EDUCATIONAL CHANGE. Vol. IV. THE FINDINGS IN REVIEW. Santa Monica, California: The Rand Corporation.

Berman, Paul and Milbrey McLaughlin. (1977). FEDERAL PROGRAMS SUPPORTING EDUCATIONAL CHANGE. Vol. VII. FACTORS AFFECTING IMPLEMENTATION AND CONTINUATION. Santa Monica, California: The Rand Corporation.

Biller, Robert P. (1980). "Leadership Tactics for Retrenchment." PUBLIC ADMINISTRATION REVIEW 40: 604-609.

Botstein, Leon. (1983). "Nine Proposals to Improve Our Schools." THE NEW YORK TIMES MAGAZINE. June 5: 58-67.

Cohen, Michael. (in press). "Instructional, Management and Social Conditions in Effective Schools" in Allan Odden and L. Dean Webb, eds. SCHOOL FINANCE AND SCHOOL IMPROVEMENT: LINKAGES IN THE 1980s. Cambridge, Massachusetts: Ballinger Press.

Crandall, David P. (1982). PEOPLE, POLICIES, AND PRACTICES: EXAMINING THE CHAIN OF SCHOOL IMPROVEMENT. Vols. I-X. Andover, Massachusetts: The Network.

EDUCATION TIMES. (1983). "Costing Out the Commission on Excellence Report: The National Education Association and Walter Mondale Talk about Billions." May 16: 4.

Fullan, Michael. (1982). THE MEANING OF EDUCATIONAL CHANGE. New York: Teachers College Press.

Howey, Kenneth R. and Joseph C. Vaughan. (1983). "Current Patterns of Staff Development" in Gary A. Griffen, ed., STAFF DEVELOPMENT. Eighty-second Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press.

Kirst, Michael W. (1982). "How to Improve Schools Without Spending More Money." PHI DELTA KAPPAN 64: 6-8.

Little, Judith Warren (1981). SCHOOL SUCCESS AND STAFF DEVELOPMENT: THE ROLE OF STAFF DEVELOPMENT IN URBAN DESEGREGATED SCHOOLS. Washington, D.C.: The National Institute of Education.

Louis, Karen Seashore, et al. (1981). STRATEGIES FOR KNOWLEDGE USE AND SCHOOL IMPROVEMENT: A SUMMARY. Cambridge, Massachusetts: Abt Associates.

McDonnell, Lorraine M. and Milbrey W. McLaughlin (1980). PROGRAM CONSOLIDATION AND THE STATE ROLE IN ESEA TITLE IV. Santa Monica, California: The Rand Corporation.

McDonnell, Lorraine M. and Milbrey W. McLaughlin (1982). EDUCATION POLICY AND THE ROLE OF THE STATES. Santa Monica, California: The Rand Corporation.

McLaughlin, Milbrey W. (1982). STATE EFFORTS TO IMPROVE EDUCATIONAL QUALITY. Santa Monica, California: The Rand Corporation.

Moore, Donald R. and Arthur A. Hyde. (1981). MAKING SENSE OF STAFF DEVELOPMENT PROGRAMS AND THEIR COSTS IN THREE URBAN DISTRICTS. Chicago: Designs for Change.

Murnane, Richard J. (1981). "Interpreting the Evidence on School Effectiveness." TEACHERS COLLEGE RECORD 83: 19-35.

National Commission on Excellence in Education. (1983). A NATION AT RISK. Washington, D.C.: U.S. Government Printing Office.

National Task Force on Education for Economic Growth. (forthcoming). DRAFT REPORT AND RECOMMENDATIONS. Denver: Education Commission of the States.

Purkey, Stewart and Marshall Smith. (1982). EFFECTIVE SCHOOLS--A REVIEW. Paper prepared for the National Institute of Education. Madison, Wisconsin: Wisconsin Center for Education Research, University of Wisconsin.

Tyler, Ralph W. (1982). "Dynamic Response in a Time of Decline." PHI DELTA KAPPAN 68: 655-658.

Williams, Richard C. (1978). "A Political Perspective on Staff Development." TEACHERS COLLEGE RECORD. 80: 95-106.

Yin, Robert and Margaret Gwaltney. (1981). ORGANIZATIONS COLLABORATING TO IMPROVE EDUCATIONAL PRACTICE. Cambridge, Massachusetts: Abt Associates.